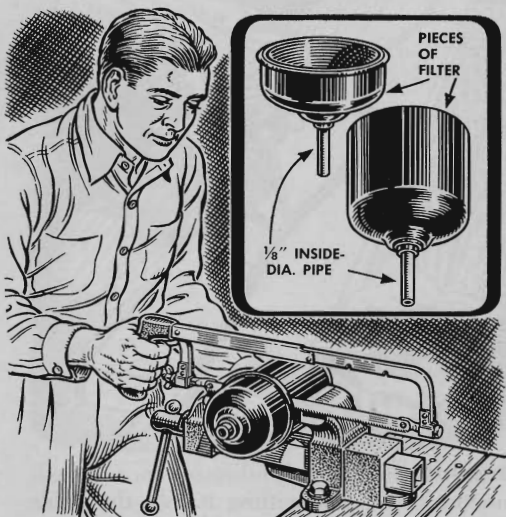




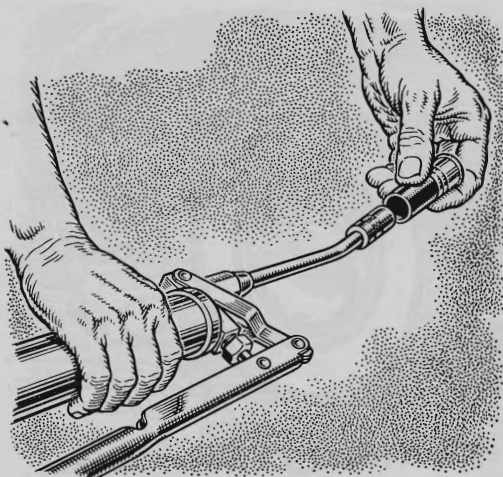
Hints FROM THE MODEL GARAGE



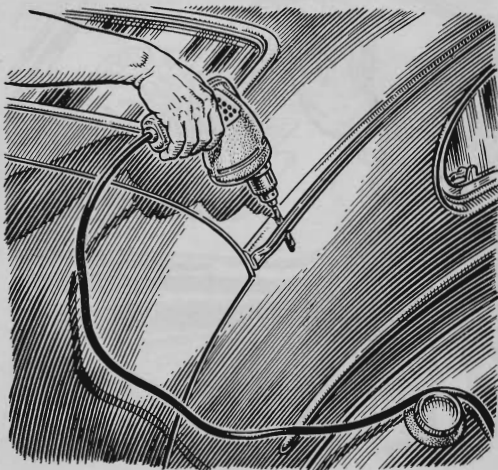
Paper wrapping can be removed by dropping a new tire so that it lands on the tread. The casing will flex and snap the paper. Don't use a knife; it may slip and damage the tire. Be sure that no bits of paper get inside, because they can cause tube failure.



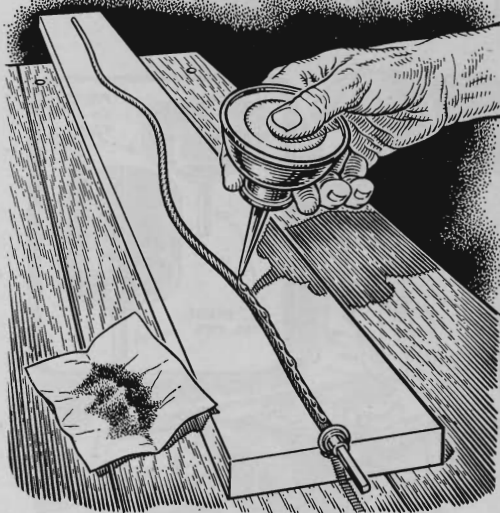
Two handy funnels for shop use can be made by sawing in two a throwaway type of oil filter. Remove the inside element. Thread two short pieces of $\frac{1}{8}$ " pipe, screw them into the already threaded holes in each half, and the funnels are complete.



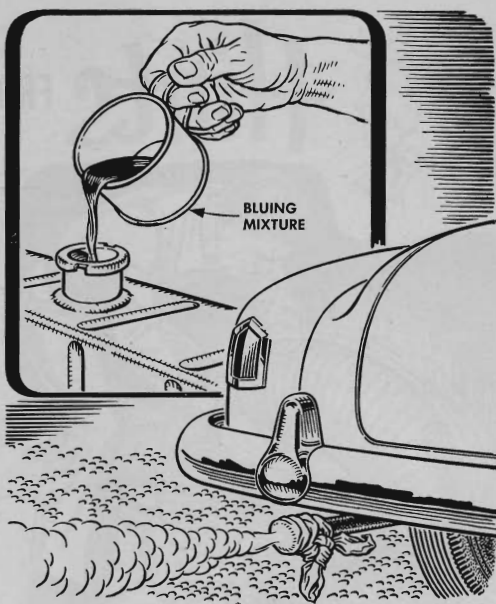
A used shotgun shell slipped over the nozzle of a grease gun will protect the coupling and keep out dirt. Dust and dirt that collect in the lubricant are sometimes driven into the grease fitting. A 12-gauge shell fits the nozzle snugly.



If water drips from the rain troughs and seeps into the trunk, you can divert most of it by simply closing the trough ends and drilling small holes an inch or so toward the front of the car. Close the troughs with solder or by squeezing them shut.



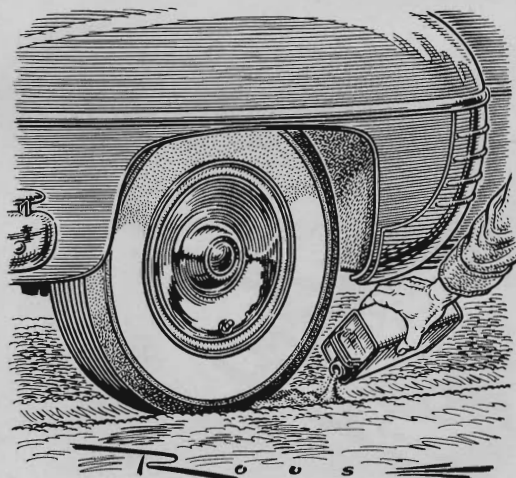
Graphite is the ideal lubricant for a speedometer cable, but getting it into the cable sheathing may be a problem. Here's one way of doing it: remove the inner cable, lay it on a board, apply the thinnest possible line of light oil on it, spray powdered graphite on the oil until the oil is blotted up and replace the inner cable.



A head gasket can be checked for leakage by adding two spoonfuls of washing bluing to a cup of permanent antifreeze, pouring it into the radiator, tying a cloth over the tailpipe and running the engine. If there's a leak the bluing will color the cloth. The antifreeze will help you in locating the leaky trouble spot.

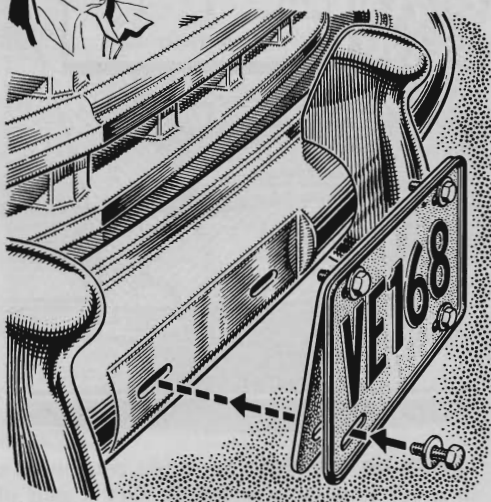


Windshield fog and steam can be wiped away quickly with a cellulose sponge. It will remove dirt and grease streaks and absorb considerable moisture before becoming saturated. A small inexpensive sponge will do the trick.

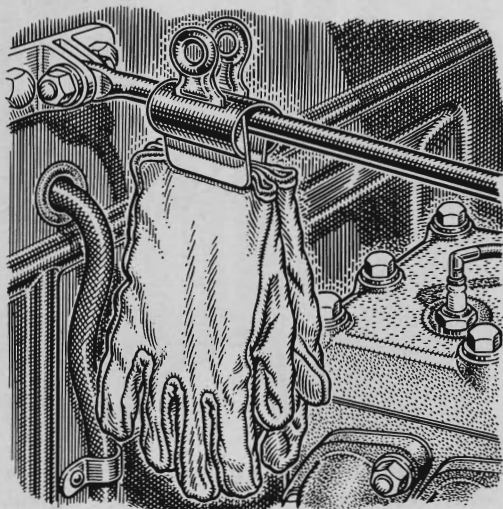


If sand is carried in a couple of one-gallon, screw-top cans, you can simply pour it under the tires when you get stuck on ice or snow. No need for a shovel to spread it. The cans are better than a box, for the sand can't scatter through the trunk.

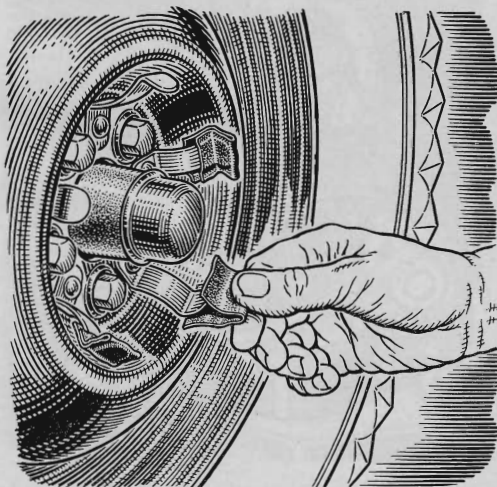
Hints FROM THE MODEL GARAGE



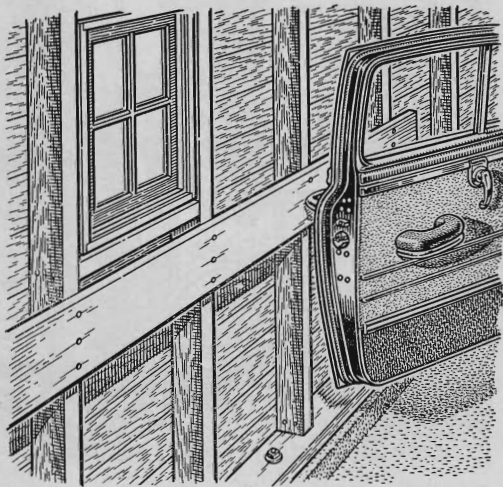
Back up your plates with composition board or exterior-grade plywood to keep the thin metal from becoming banged up in parking scrapes. Run fasteners through plate and board on both edges; use two bottom screws to mount the assembly to the car.



A trucker's gloves will dry as he drives if clipped under the hood like this. A big paper clip astride the radiator support rod is one way to hold them near the hot exhaust manifold. With two pairs along, he can have one pair drying at all times.

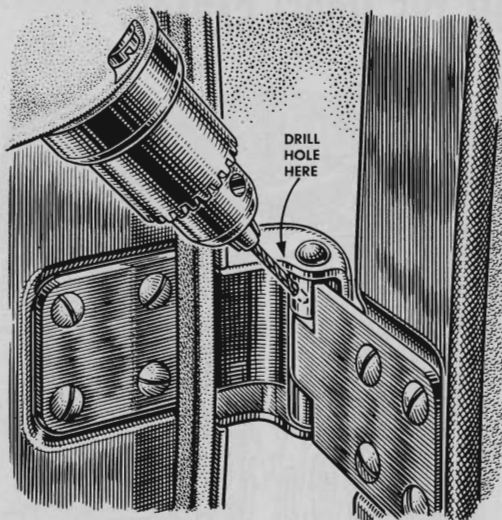


Squeaks may come from the wheels of even a new car. If you have trouble tracking down an elusive running-gear noise, don't neglect the hub caps. In one case, removing the caps and applying a strip of tape on each clip silenced a mysterious chirp.

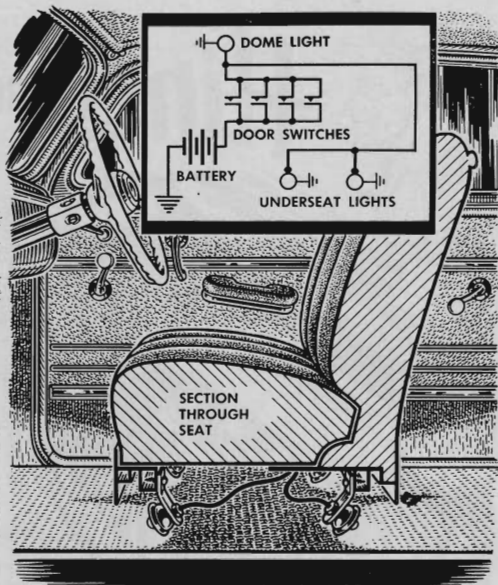


A bumping board placed inside the garage at the height of the car-door handles will keep the door from being sprung if the car rolls back with the door open. An 8" board placed at handle level will give the driver time for second guesses.

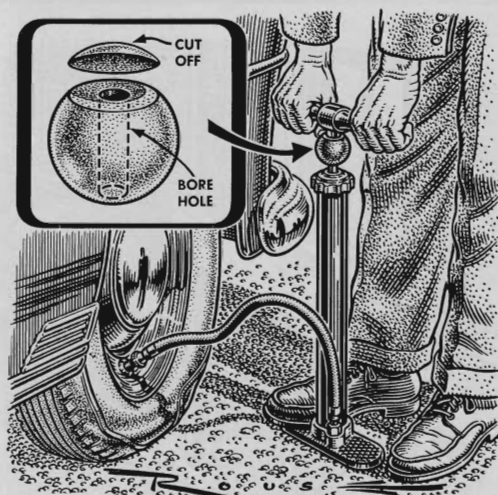
MORE Hints from the Model Garage



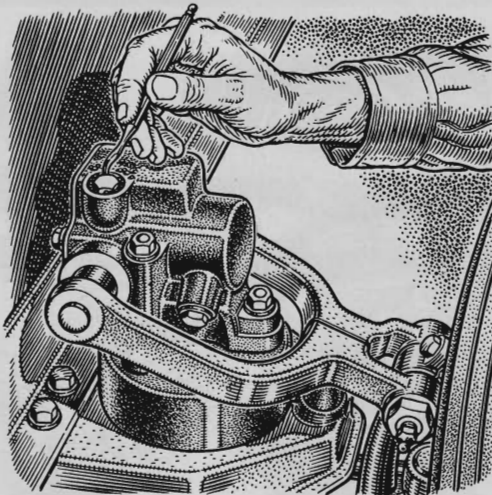
External hinges on the doors of old cars often develop a rusty-gate wheeze, and oil squirted on the hinges may do no good. As a remedy, try drilling a small slanting hole near the top of the hinge, going just to the hinge pin. Fill the hole with penetrating oil and let it work down the length of the pin.



Lights on the floor are a big convenience in a car and easy to install. Get a pair of truck marker lamps, remove the red glass and bolt the lamps under the front seat so one will shine to the front and one to the rear. Wire the lamps as shown so that the door switches will turn them on along with the dome light.



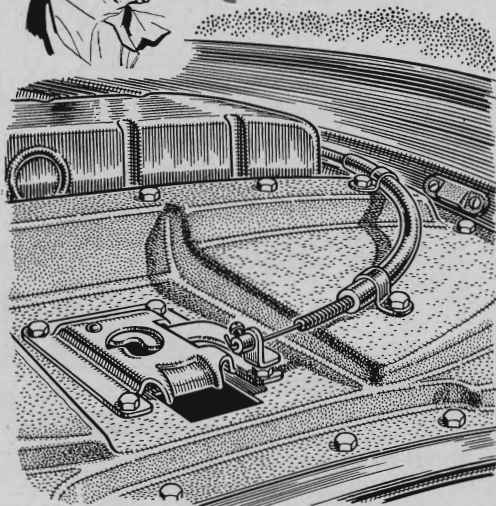
A small rubber ball can be made into a shock absorber for a hand pump. Cut a slice off the ball and drill a hole so that the ball is a snug fit on the pump rod. If the rod bottoms before the ball takes up the shock, shorten the rod slightly.



Clean dirt from around the filler plug of this type of front shock absorber before attempting to remove the plug. Unless you do, there's a good chance the socket won't go all the way down, you'll round off the plug corners and never get the plug out.



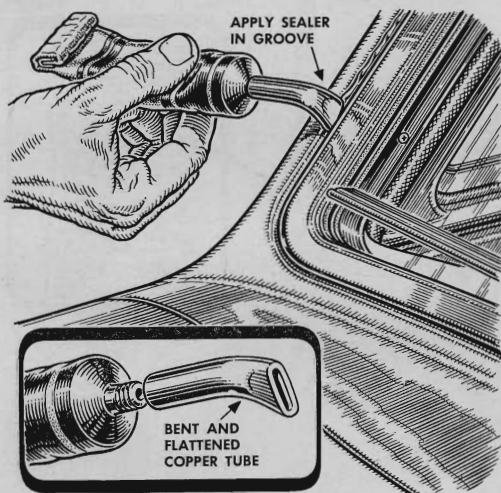
Hints FROM THE MODEL GARAGE



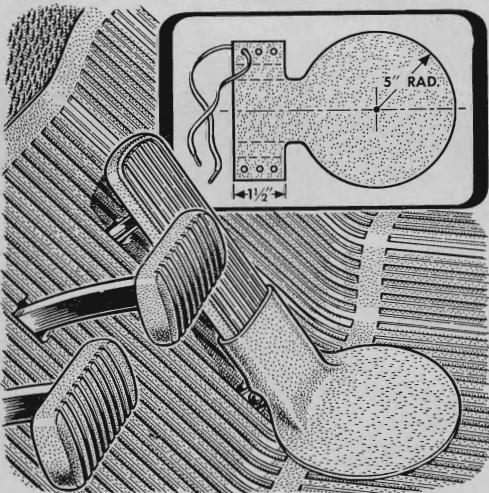
Copper tubing installed as a housing for flexible control cables running to hood-release mechanisms and heaters will eliminate lost motion and buckling. In the case of a hood release, the hold-down bracket can be placed over the tubing.



A tailpipe extension can be made from a piece of radiator hose. Force a piece of hose about 6" long over the end of the tailpipe and apply aluminum paint. Extend the hose beyond the bumper so that the chrome will be protected.



In applying sealer around a windshield, it is often difficult to press the fluid out of the tube without getting it all over the glass. A short piece of copper tubing placed over the end of the spout like this will help you do the job.

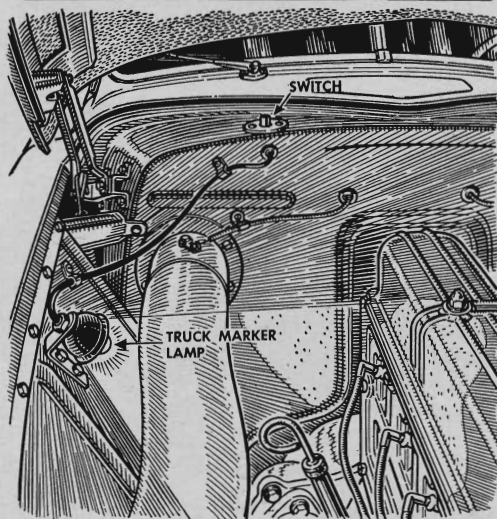


A rubber heel pad attached to the accelerator as shown above will stave off those unsightly holes in the floor covering. The pad can be cut from an old inner tube. Tie the end of it around the base of the accelerator pedal.

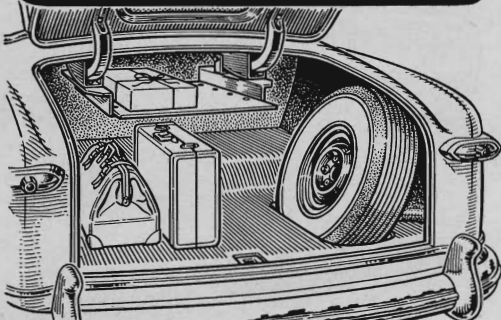
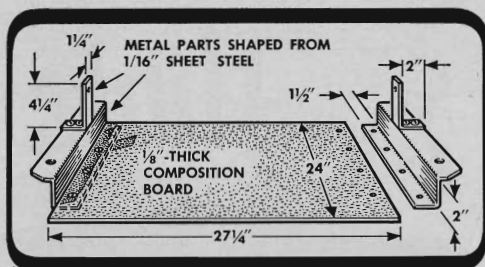
Please turn the page for more auto hints.

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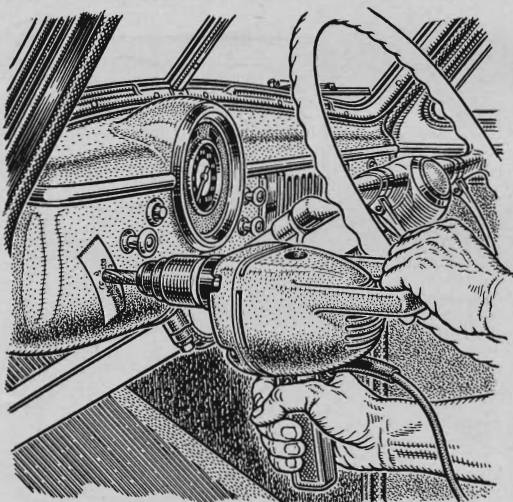
MORE Hints from the Model Garage



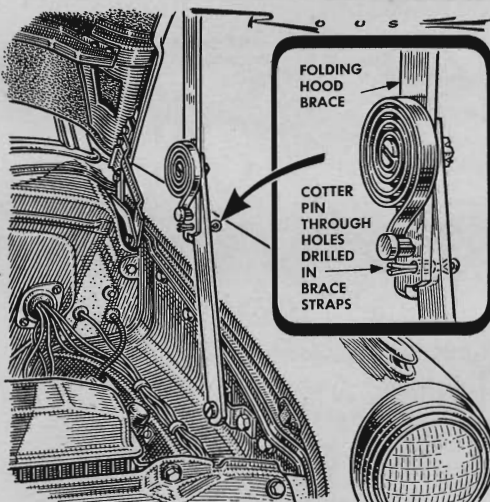
An under-hood light is easy to install. Buy a truck marker lamp from an auto-supply store, remove the red glass and bolt the light to the side of the engine compartment. Aim it to shine on the dipstick. Then mount a car-door switch so that the descending hood will turn it off. Run a lead to a hot wire and the job is done.



Small packages will be kept out of harm's way in a luggage compartment if you build a light shelf like this one. It is attached to the hinge guards by bolts and wing nuts so that it can be removed when you need maximum space. The dimensions given suit a 1951 Ford but can be adapted to other cars. Be sure to leave clearance for trunk lid.



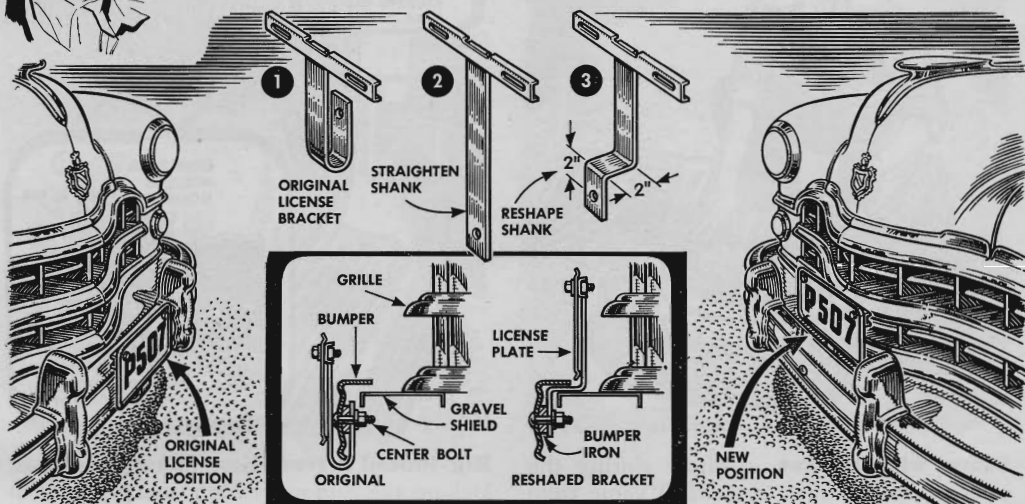
In drilling any part of the car metal to install accessories, first stick a piece of tape over the site of the proposed hole. Then centerpunch the hole and start drilling. With this precaution, the chance of damaging finish around hole is greatly lessened.



A hood that is supported by tension springs may develop a habit of falling when the springs weaken. To make it safe, drill a small hole through the brace straps with the hood up. A cotter pin slipped in the hole will then keep the hood from falling.



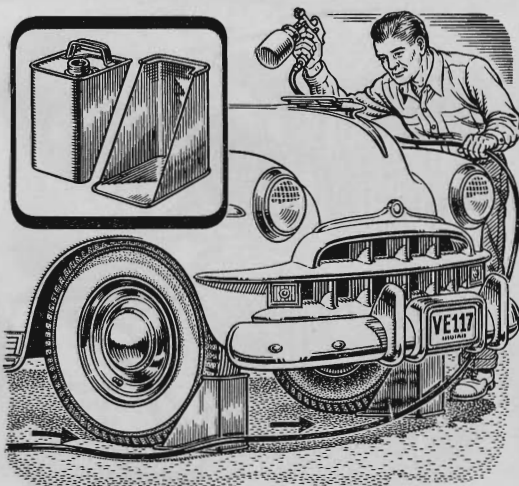
Hints FROM THE MODEL GARAGE



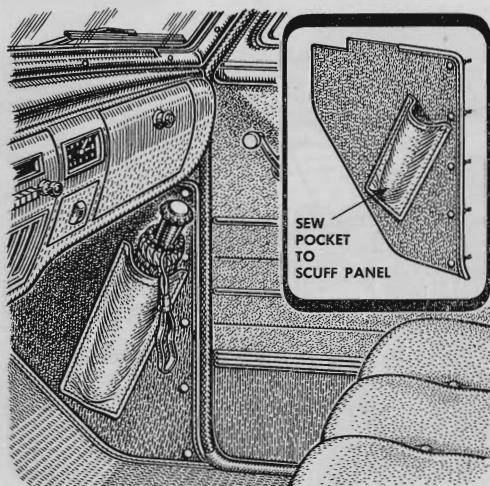
A license plate takes a beating when located ahead of the front bumper. But on some late-model cars that is where the factory bracket forces you to put it.

If your plate is way out front, you may be able to shift it to a safer spot above the

bumper by the simple steps outlined here. After the U bracket has been reshaped, you usually will find enough clearance between the bumper and gravel plate so that the bracket can be slipped into position by pressing down on the gravel plate.



Here's a shop trick guaranteed to save tempers every time someone starts dragging an air hose, air grease gun or paint sprayer around a car. Put these diagonally cut oil or antifreeze cans ahead of the wheels and the hose won't snag under the tires.

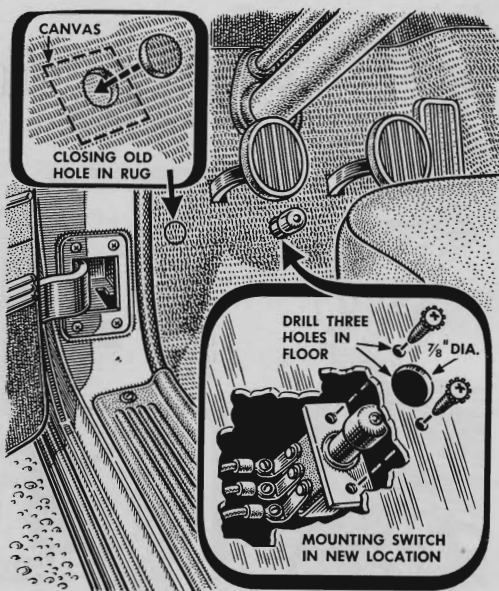


An umbrella holder can be added to your car at little cost. For a folding umbrella, remove the scuff lining from the passenger's side and have an upholstery shop sew on a pocket of matching material. A pocket for a full-length umbrella could go on a door.

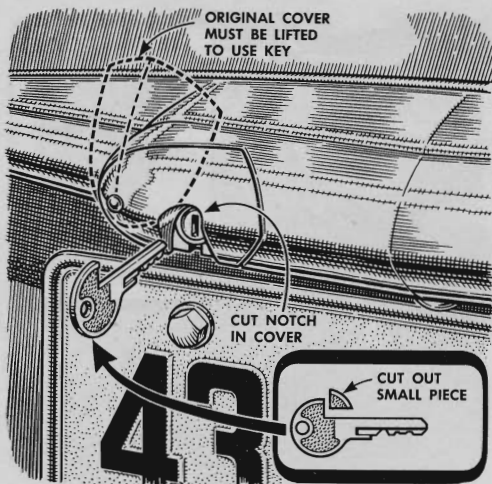
MORE Hints from the Model Garage



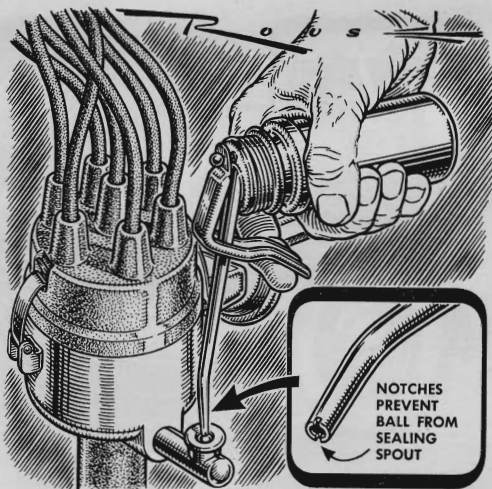
Store winter tires carefully during the summer if you want to get full value from them. Wrap each casing with newspapers. This will reduce the chance of ozone damage, since paper absorbs ozone—one of rubber's worst enemies. Put the tires in a cool dark place (not damp) away from electrical machinery that might generate ozone.



Big-footed drivers have found themselves kicking the dimmer switch unexpectedly in some recent cars because it is badly placed. One who had the trouble was Stewart Rouse, the artist who makes these drawings. He moved the switch as above and now reports that "my size-15 left shoe has plenty of space to graze around in."



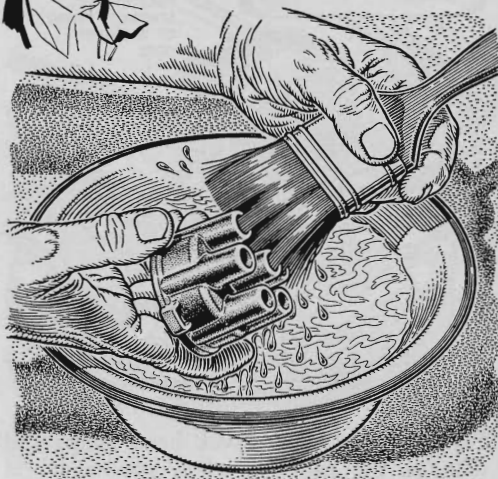
To open his trunk, the owner of a late-model Ford reports, it was necessary to hold the lock cover with one hand and turn the key with the other. Modifying the lock cover and key as shown above now permits him to get the lid up with only one hand.



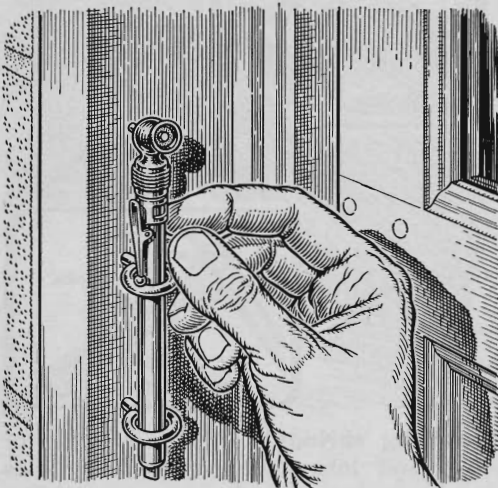
A notch filed crosswise in the end of the spout of a pump oiler will help you get oil into ball-check fittings. Otherwise, when the end of the spout is pressed against the ball to depress it, oil may fail to come out—or may squirt to the side.



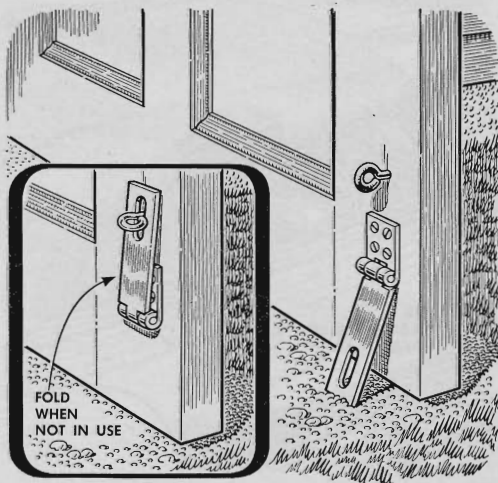
Hints FROM THE MODEL GARAGE



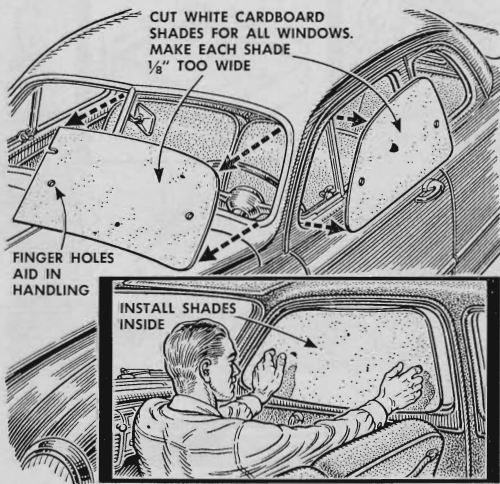
Washing the distributor cap thoroughly with white gasoline may save you the cost of a new one in the case of ignition trouble. A film of grease and dirt inside and outside the cap can cause shorts, resulting in missing and misfiring.



A tire-pressure gauge can only do its two important jobs (stretching tire mileage and tipping you to oncoming trouble) if you keep it where you can always find it for checking cold tire pressures. A pair of screw eyes in a garage wall make a handy rack.



A hasp can be used to hold a garage door open. Screw it to the lower edge of the door so that the extended flap will dig into the ground as the door closes. Fold up the hasp and mount a screw eye in the slot to hold it up while not in use.

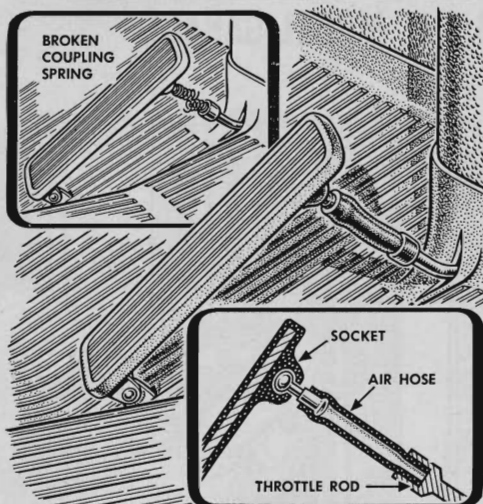


Cardboard shades fitted into the windows and windshield on the inside will help keep your car from heating up like a greenhouse when you must park in direct sunlight. Cut the shields about $\frac{1}{8}$ " too big. Spring them in place and they will stay put.

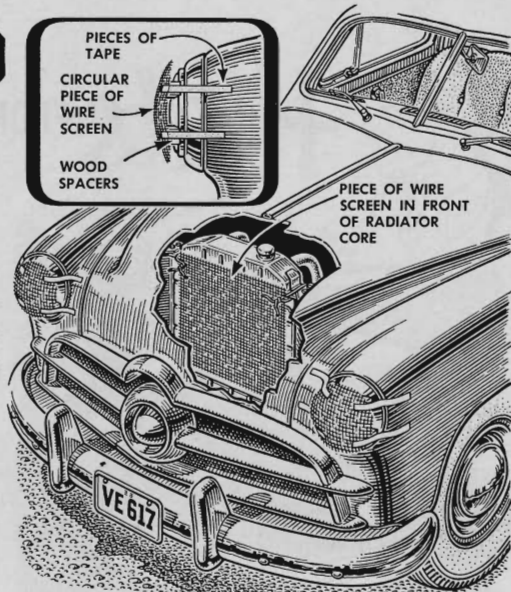
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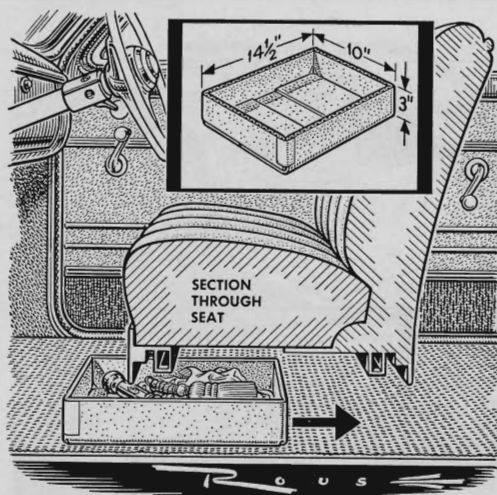
MORE Hints from the Model Garage



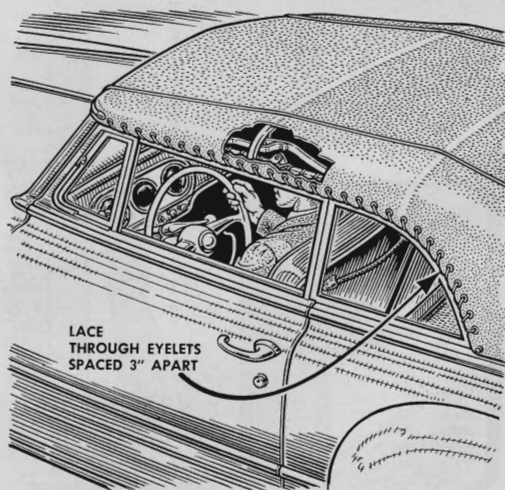
Coupling springs on the accelerators of Ford and International trucks sometimes break as shown in the upper inset. Because few dealers stock the springs, one garage operator gets the trucks back into service while waiting for delivery of factory replacements by installing a piece of air hose. The hose simply twists into place.



Flying stones can break head lamps and damage the radiator when you travel at high speed over the gravel roads that you find in some parts of the country. A piece of screening slipped down in front will protect the radiator core. Round pieces of screening taped over the lenses will protect the glass. Wood spacers will take care of the glass.



A flat cardboard box can be slipped under the front seat of some cars to provide additional storage space. A box of the dimensions shown will be suitable in most cases. Such a container will take some of the load off the usual glove compartment.



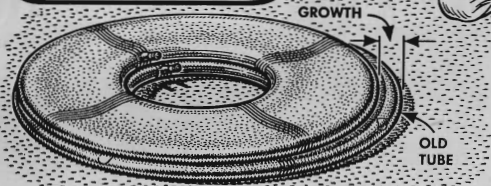
To keep out drafts during bad weather, one convertible owner spaced black eyelets along the edge of the top and then lashed the top to the frame. This kept the top from drawing away from the frame—and shut out gusts of cold wind.



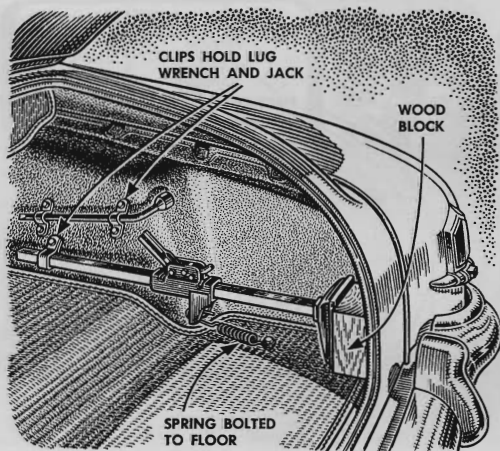
Hints FROM THE MODEL GARAGE



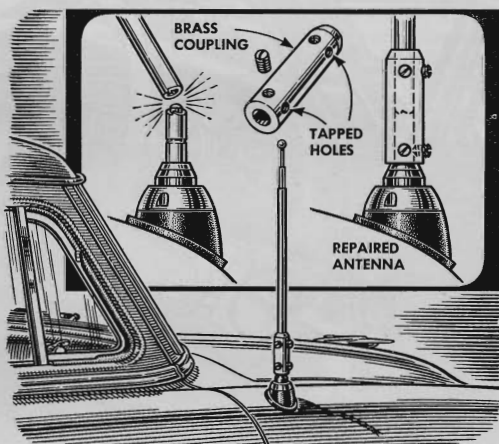
A small dent in the top of a car can often be pushed out by pressing a blunt ice pick or knitting needle through the headlining and tapping up. Then scratch the material around the hole in the headlining and fuzz it up to remove traces of the hole.



Because rubber grows in use, putting an old tube in a new tire may not be a good idea. New tubes usually are smaller in cross section than the same size casing to allow the tube to stretch into place inside the tire. An old tube may become pinched.



Rattle-free jack storage is easily provided. Attach two pipe straps to the trunk side with self-tapping screws, canting one in relation to the other so you'll have to press the wrench in place. Mount a spring to keep the jack butted against a wood block, with the shaft resting in a metal clip. Use the block as a wheel chock.

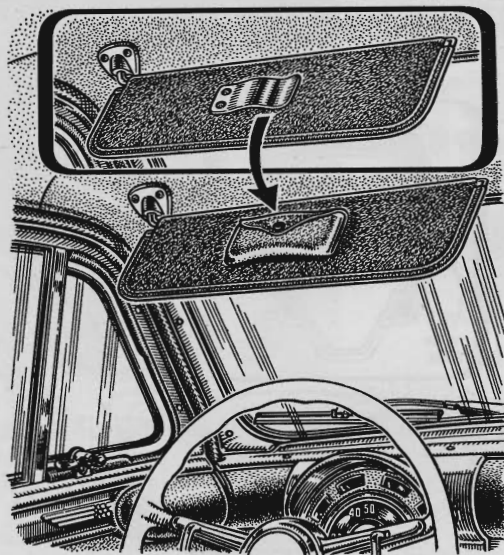


If an antenna is broken by mischievous children or overhanging tree limbs, it can sometimes be put back into service by making the repair illustrated here. The coupling might be made from a piece of brass, which makes a good electrical connection. Setscrews turned into the tapped holes will keep the two aerial sections together.

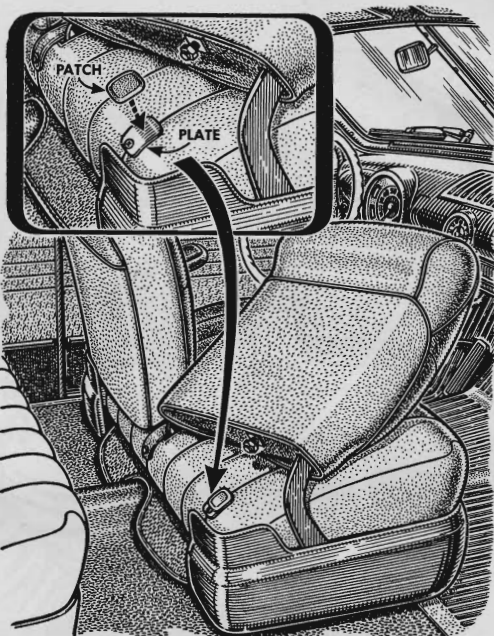
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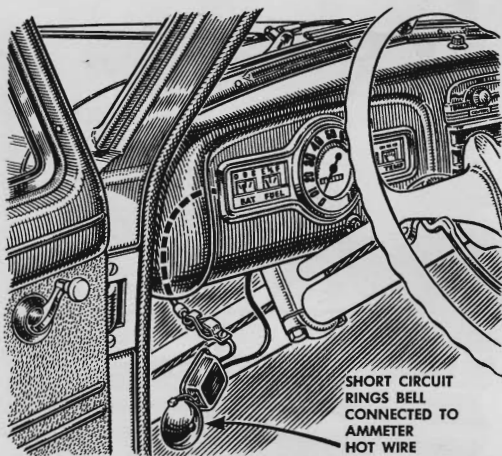
MORE Hints from the Model Garage



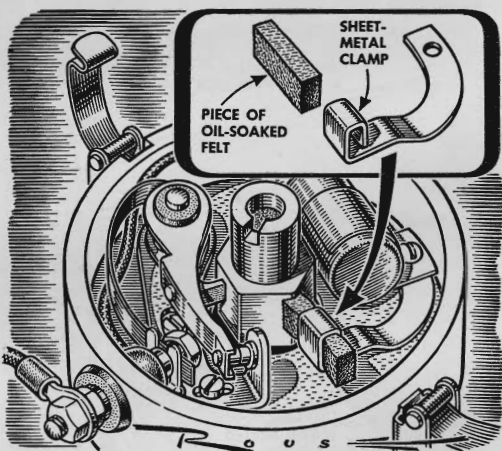
A rectangular piece of metal with one end screwed to the sunshield makes a handy clip for your sunglasses. Just slip the case on the clip. Sheet brass or aluminum might be used for the clip. Polished with steel wool, either metal will look good.



An annoying rattle may develop in the passenger seat of late-model Fords which have a small metal plate and limit bolt as shown here. The rattle usually can be eliminated by applying a ready-cut tire patch to the metal to act as a cushion.



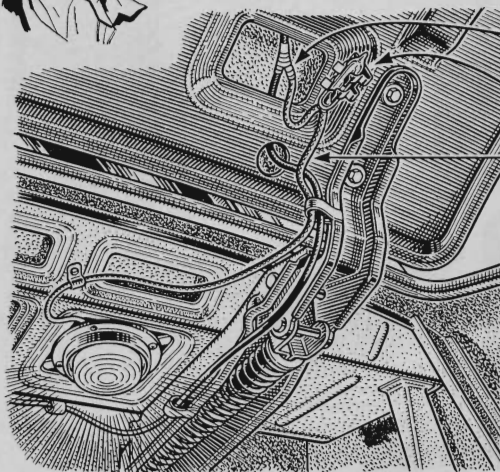
A short in the wiring of an old car is sometimes difficult to hunt down because it is intermittent and unpredictable. If that happens to you, try connecting a doorbell in series with the hot lead to the ammeter and systematically bouncing on the bumper and wiggling the wiring until the sound of the bell leads you to the short.



Ignition troubles are sometimes traced to rapid wear of the fiber rubbing block that actuates the ignition points in the distributor. This wear can be reduced by keeping the cam lubricated. A felt oiler held in a sheet-metal clamp is one way of doing this. Apply a drop or two of light oil to the felt.



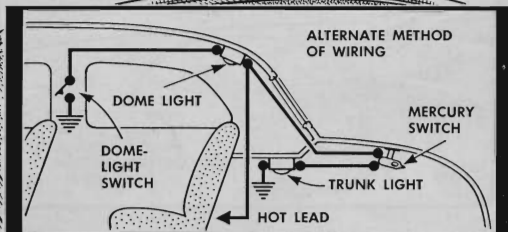
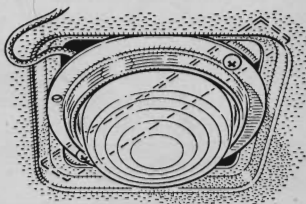
Hints FROM THE MODEL GARAGE



SPLICE ONE SWITCH WIRE TO LICENSE-LIGHT WIRE

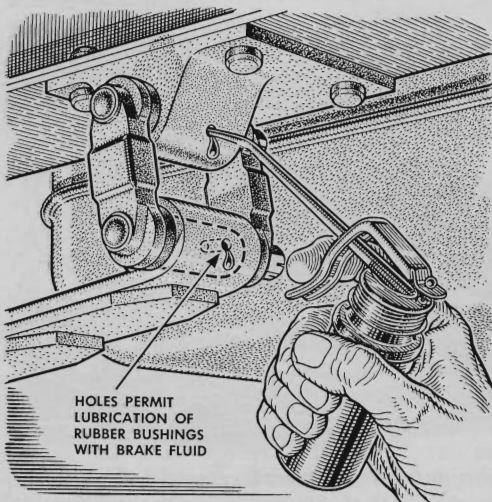
MERCURY SWITCH

CONNECT OTHER SWITCH WIRE TO TRUNK LIGHT



A lamp that lights automatically when you lift the trunk lid can be installed with parts that cost around a dollar. A mercury switch will take care of turning the light on and off. A flush-mounted clearance lamp with a clear lens is a good choice for the light. It usually can be set into a recess in the lid or body bracing by placing a metal

strip back of the opening and running sheet-metal screws through the holes in the flange. The strip or lamp must contact bare metal for a good circuit. If it is connected to the license-light wire, the lamp will come on only when the car lights are on. In the alternate method, the lamp will operate independently.



HOLES PERMIT LUBRICATION OF RUBBER BUSHINGS WITH BRAKE FLUID

A persistent squeak in a rubber-bushed spring shackle usually can be eliminated by drilling a hole into the bushing and forcing in brake fluid with a pump oiler.

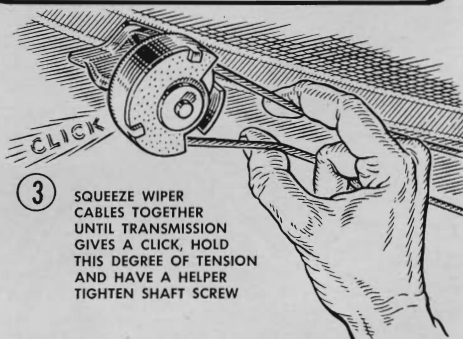
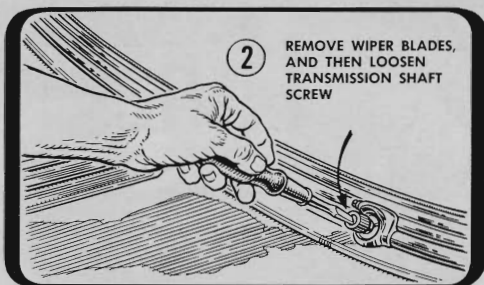
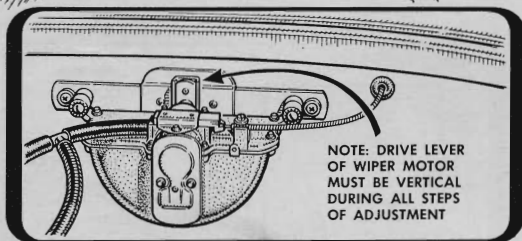
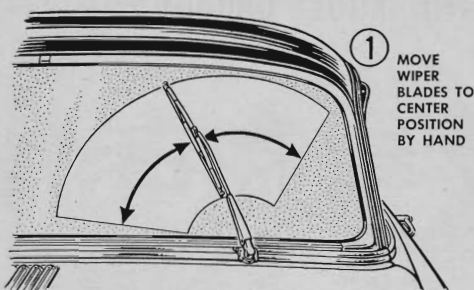


If a battery post is so worn the cable won't hold, cast a new post around the old one. Make a form by shaping aluminum around a broom handle tapered as shown.

Please turn the page for more auto hints.

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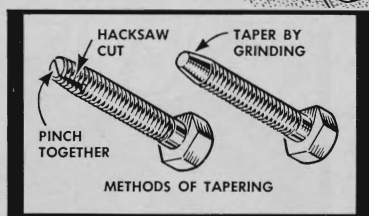
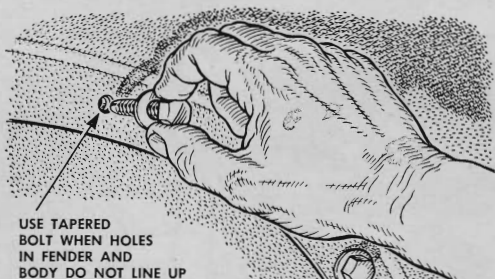
MORE Hints from the Model Garage



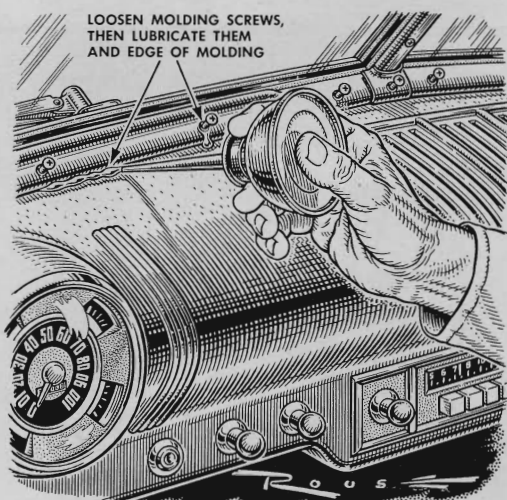
Sluggish wipers can often be traced to cable drives that are too tight. The remedy is to slack off the cables a trifle.

Center the wiper arms by hand (upper left), bringing drive lever to vertical position (lower left above). Remove wiper arms

and loosen screw at end of wiper shaft about $\frac{1}{4}$ turn (upper right). Pinch the cables together (lower right above) until you hear the serrations in the wiper drive slip one notch. Tighten the shaft screw and repeat this operation on the opposite shaft.



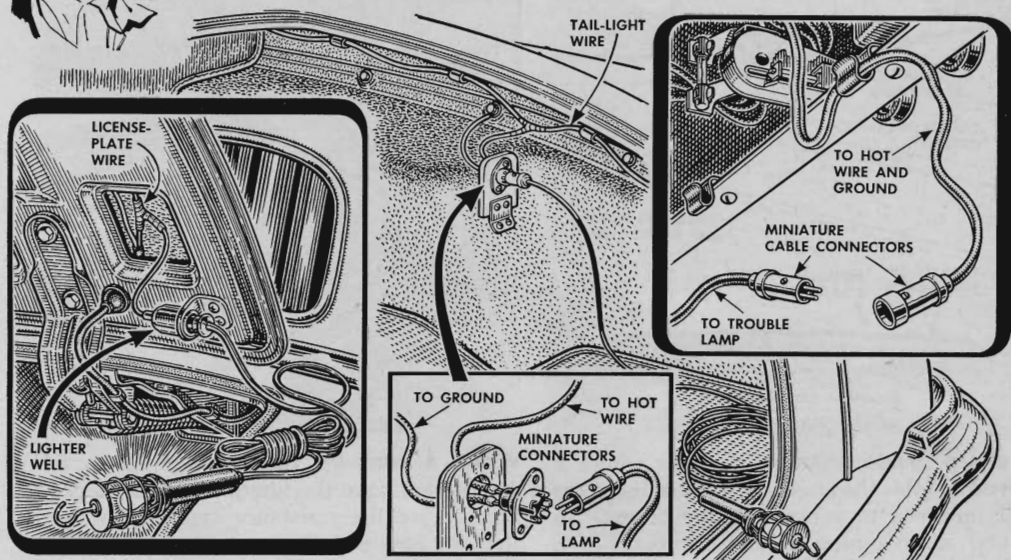
If one or more of the fender holes do not line up with those in the body when a fender is being installed, taper the ends of the bolts by one of the methods shown. When the bolt is pulled tight, the taper will force the holes into matching position.



An annoying squeak often develops in the molding that fits between the instrument panel and windshield. You usually can get rid of it by loosening the screws and squirting penetrating oil containing graphite on the screws and under the molding.



Hints FROM THE MODEL GARAGE

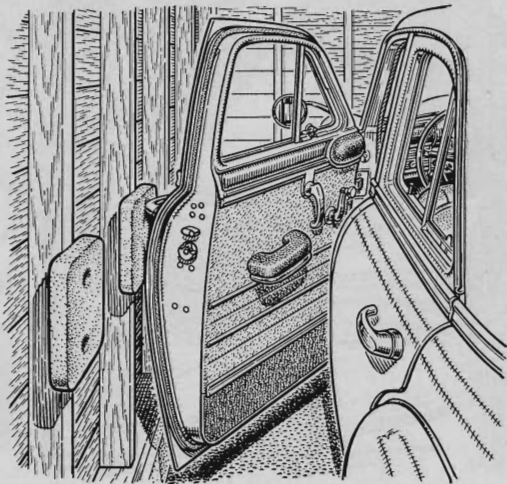


A **trouble-light connection** in the trunk is a handy addition to a car. If you have a light that plugs into the cigarette lighter, an additional lighter well, attached to a bracket under the trunk lid, will extend the range of its usefulness. You can connect

it to the license-plate wire. Miniature cable connectors available from radio-parts stores also offer a convenient means of hooking up a light. Two of these sketches suggest how to use them in connections in the trunk and behind the dash.

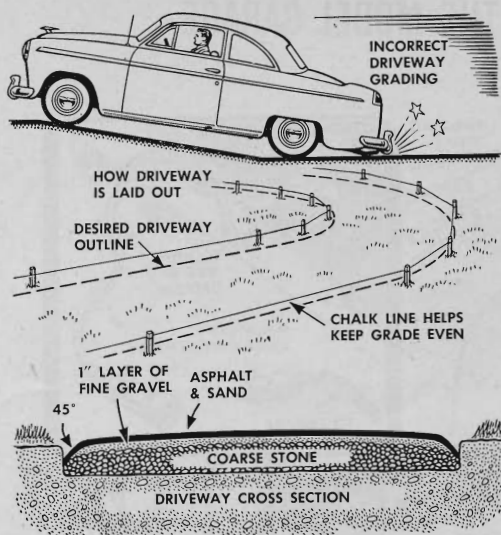


Leaving the doors half-latched when a car is in the garage is a good custom. This will give rubber weather stripping a chance to regain its resiliency.

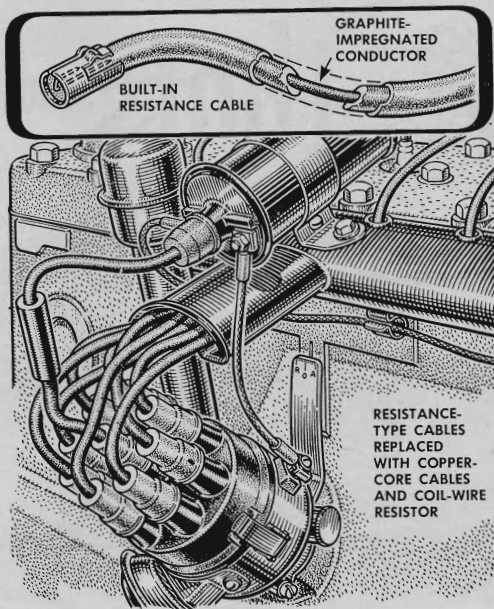


Wall bumpers made by nailing rubber kneeling pads to the wall will keep car doors from being scarred when they are opened in a garage where space is tight.

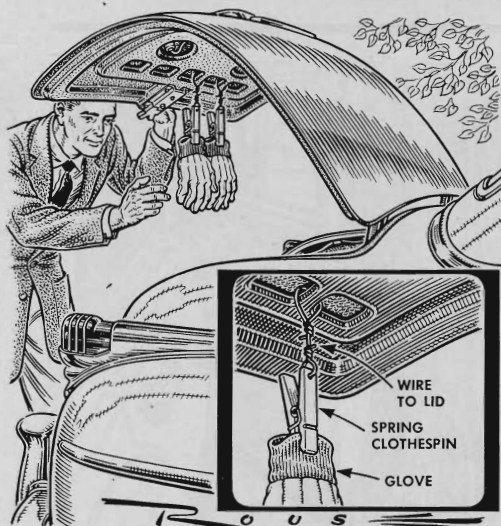
MORE Hints from the Model Garage



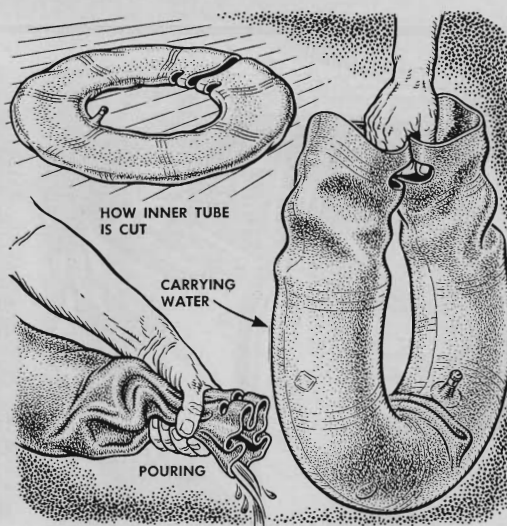
A sharp grade change, perhaps where a driveway joins the street, will cause bumpers and tailpipes to scrape the pavement. So if you are planning a new approach to a garage located above or below street level, lay it out to avoid abrupt grade variations. The sketch shows other helpful points for building a driveway.



When a tune-up fails to restore an engine's pep, have the ignition cables checked if they are the resistance type. New ones may be needed. Otherwise, you might try the trick of one reader who installed regular stranded cables, put a carbon-type suppressor in the coil wire and found the engine showed marked improvement.



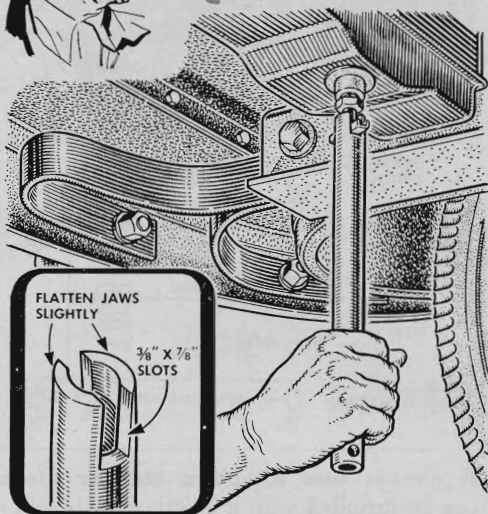
Work gloves for changing tires or other roadside jobs will always be easy to find if you suspend them in spring-clip clothespins wired to the trunk lid.



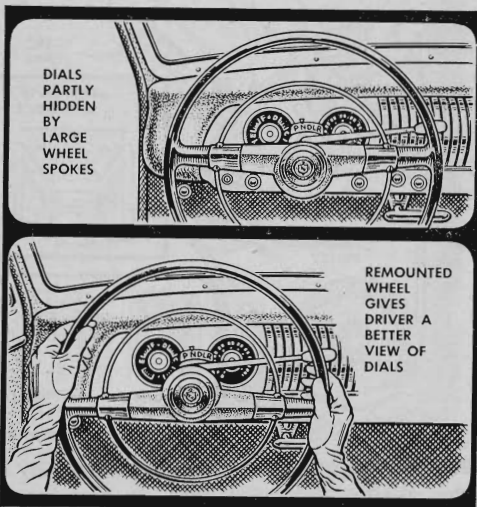
An inner tube cut like this and stowed away in the luggage compartment takes up little space—and will be ready for use if you need a container to carry water.



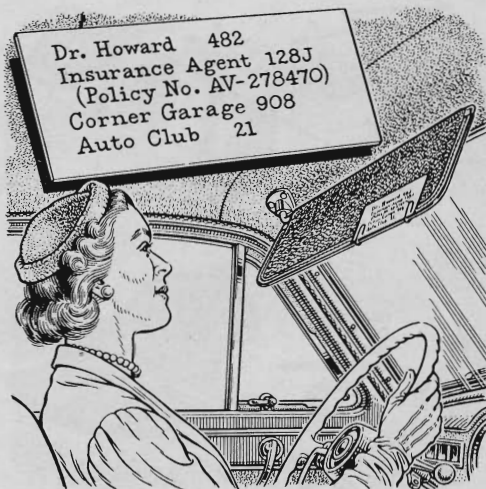
Hints FROM THE MODEL GARAGE



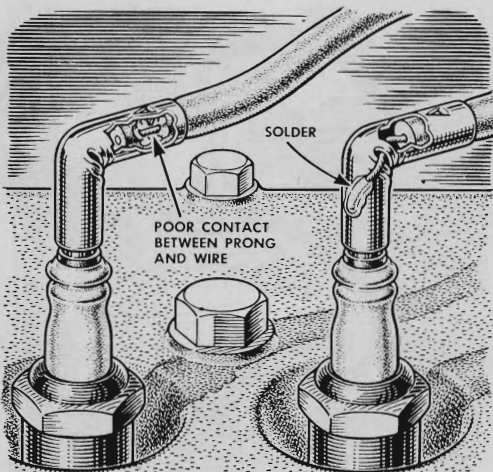
A wrench made from hardened copper tubing makes it easier to open and close a cooling-system petcock under the car. As you open the petcock, the coolant will run down the tubing, not your sleeve. Drill a hole in the end and hang it on a nail.



How high you sit may determine whether you have a clear view of the driving gauges through the steering wheel. On late cars with two-spoke wheels it sometimes helps to pull off the wheel, turn it 180° and remount it with the spokes below the center.

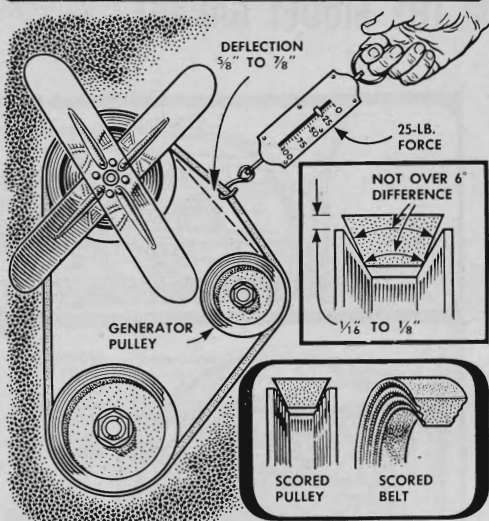


For emergencies, especially if several of the family drive, post a list of essential telephone numbers in the car. Include the policy number of your car insurance as well as the numbers of any personal-accident or hospital coverage that you have.

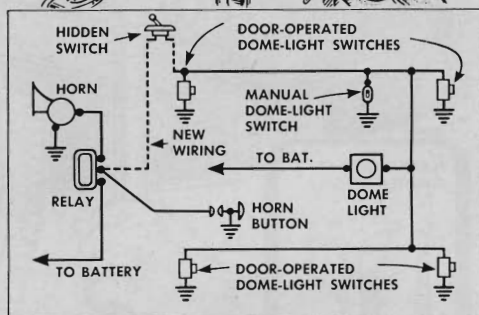


Hard starting may result from a faulty contact between the spark-plug wire and connector. In such cases, one mechanic suggests stripping back the insulation, replacing the connector and soldering the bare wire to the side of the connector.

MORE Hints from the Model Garage



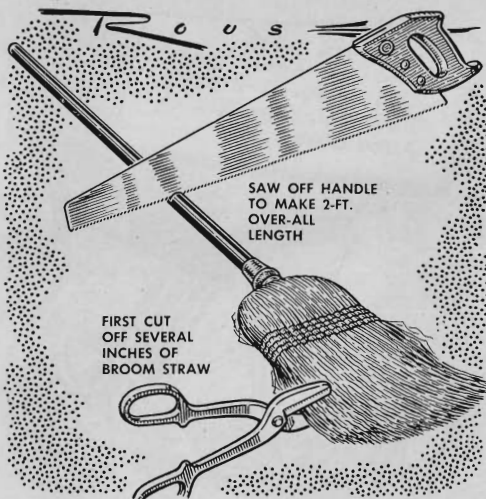
Fan-belt life may be shortened by any of the reasons indicated here. In installing a new belt, always make sure it is engineered (in cross section) to fit your particular pulleys. If a pulley is scored, your belt eventually will become scored too—and weakened. If too tight, the belt will damage water-pump and fan bearings.



A simple and effective burglar alarm can be installed with a length of wire and a single-pole switch. Use the wire to connect the horn and courtesy-light circuits through the switch. If anyone opens the door, the horn will blow. Hide the switch somewhere on the exterior of the car so you can shut off the alarm system.



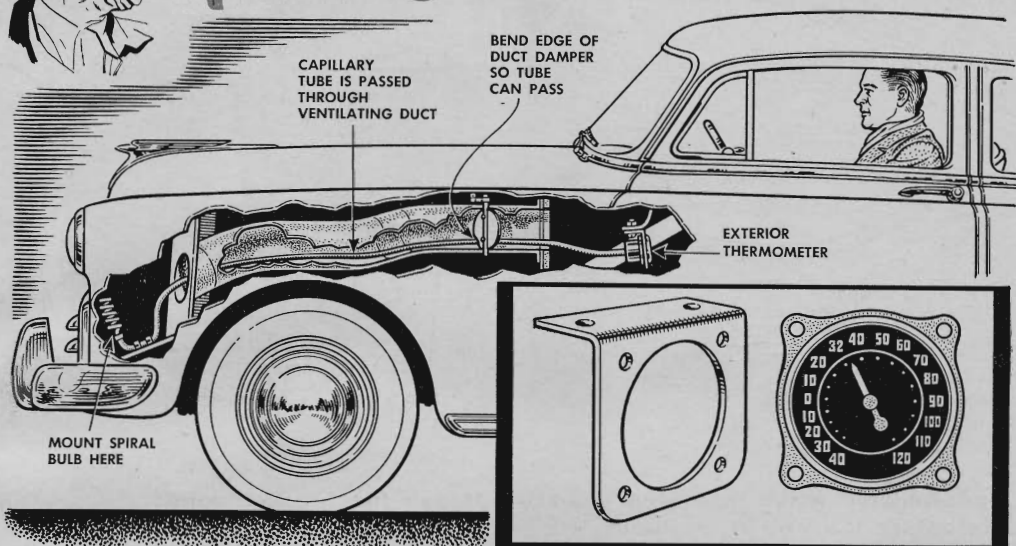
If static sparks crackle from your fingers when you slide into or out of a car equipped with plastic seat covers, try keeping your hand on the door handle until you are settled or out. This will carry off the charge from your body.



A handy brush for cleaning road dirt from the underside of a car can be made from a discarded household broom. Shorten the handle with a saw and snip about 6" off the bristles, leaving just enough so you'll have a brush that's good and stiff.



Hints FROM THE MODEL GARAGE

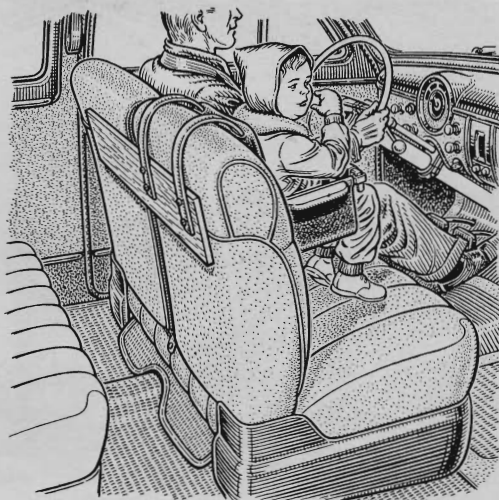


Keeping track of air temperature while you drive may offer a warning of icy conditions ahead, especially when it's near freezing. Here's the setup one driver installed,

using instruments obtained from surplus outlets. A vapor-pressure air-temperature indicator, mounted in the vent tube, gives readings on a panel dial.



Gauging tire pressure regularly is a rule it pays every car owner to follow. For this, a reliable gauge is needed. One way of protecting the gauge is to store it in a toothbrush container. Dirt may damage a gauge carried loose in the car.

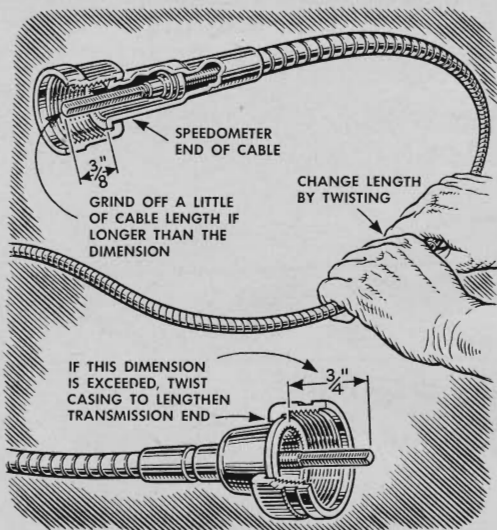


A baby seat hooked over the passenger seat of a two-door car may pitch the child forward in case of a sudden stop, if the driver is alone. To prevent this, screw the ends of the seat hooks to a board long enough to extend behind the driver's seat.

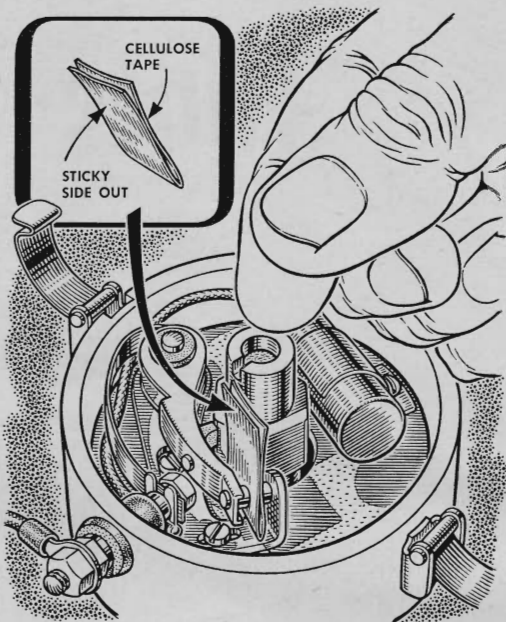
Please turn the page for more auto hints.

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MORE Hints from the Model Garage



Speedometer noise may result if relative lengths of the cable and casing are not correct. The sketch shows how much the cable usually should extend from the casing at each end. Twisting the casing will shorten or lengthen it as much as $\frac{1}{4}$ ".



If you file breaker points, be sure all particles of metal or dirt are removed. One way of doing this: fold cellulose tape with the adhesive side out, press it between the points, bring them together. However, point replacement usually is best.



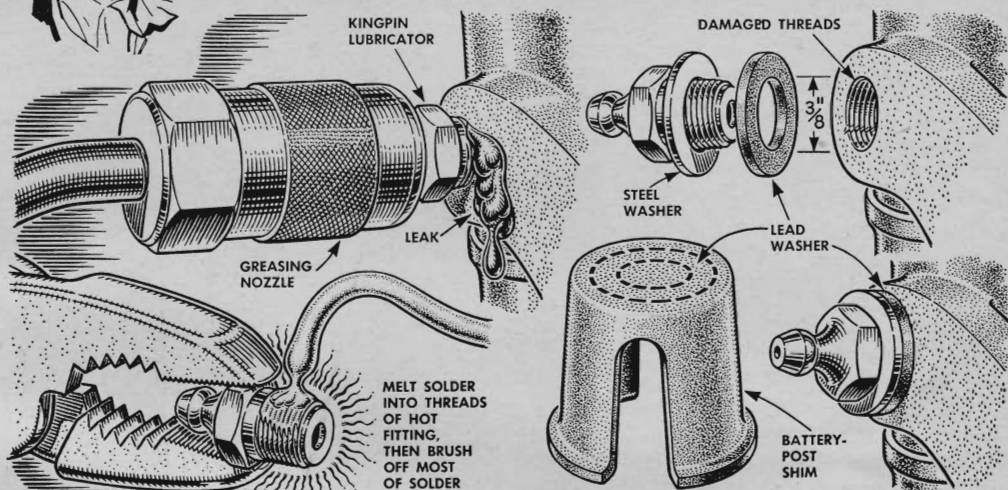
For applying a cleaner before waxing a car, some owners find a cellulose sponge handier than the usual cloth pad. Wet the sponge and squeeze it dry first. When the sponge is dirty, soap and water will make it as good as new.



In working with several batteries around a shop, there's always a chance the clamps may contact other conductors. Insulating shields for the clamps are easily made from the flexible plastic bottles used for cosmetic sprays and the like.

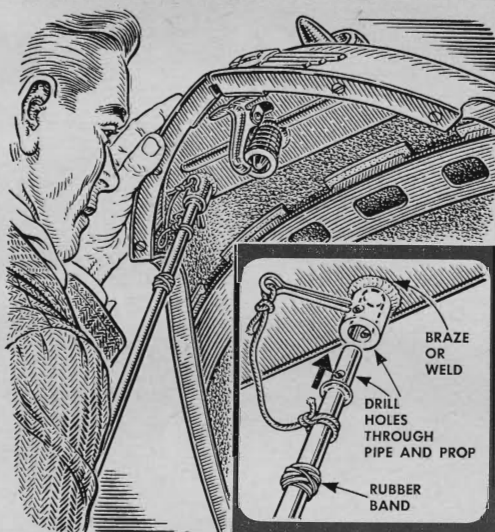


Hints from the Model Garage

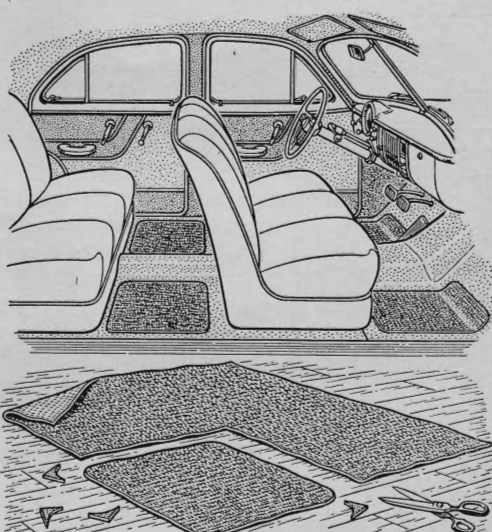


Grease-fitting threads may allow a serious loss of lubricant if damaged. One mechanic has found that this often occurs when new kingpins are installed. In such cases, he removes and heats the fittings, melts solder

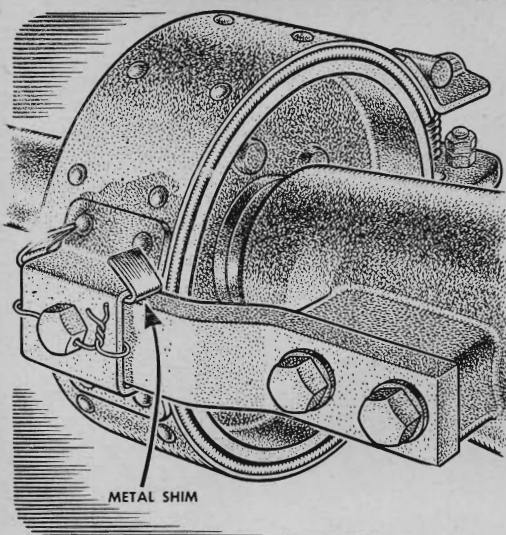
on the threads and brushes off the excess as at left above. Another sealing procedure, shown at right, consists of cutting a lead washer from a battery-post shim and clamping it under a steel washer.



A gust of wind may whip up a raised hood, freeing the prop and allowing the hood to crash shut. A short piece of pipe brazed or welded under the hood is a safety feature to prevent this. Use a rubber band to hold the cotter pin while not in use.



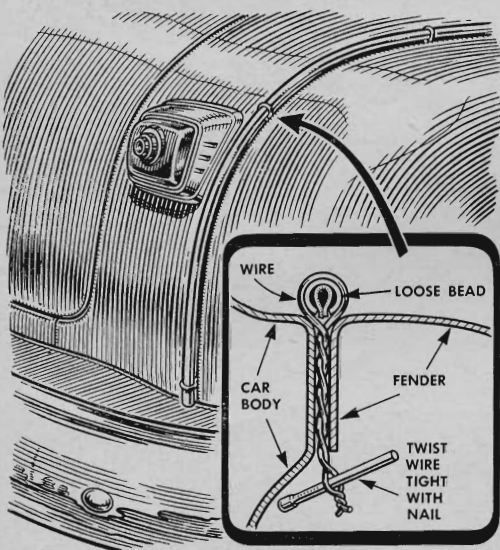
Floor mats cut from an old rug are an economical way of replacing worn-out rubber mats. Cutting off the corners helps prevent fraying and raveling. Most of the sand and dirt lodged in the rug mats can be removed by periodic shaking.



For adjustment of long-used Chrysler-type parking brakes, one mechanic inserts a shim between the band and the anchor strap, bending over the shim ends. This keeps band and drum aligned vertically and allows close adjustment without dragging.



A discarded plastic tablecloth makes an ideal temporary seat cover when you must drive in dirty and greasy clothes or while you are doing a car-repair job. The next time you see one in a trash barrel, rescue it and store in the luggage compartment.



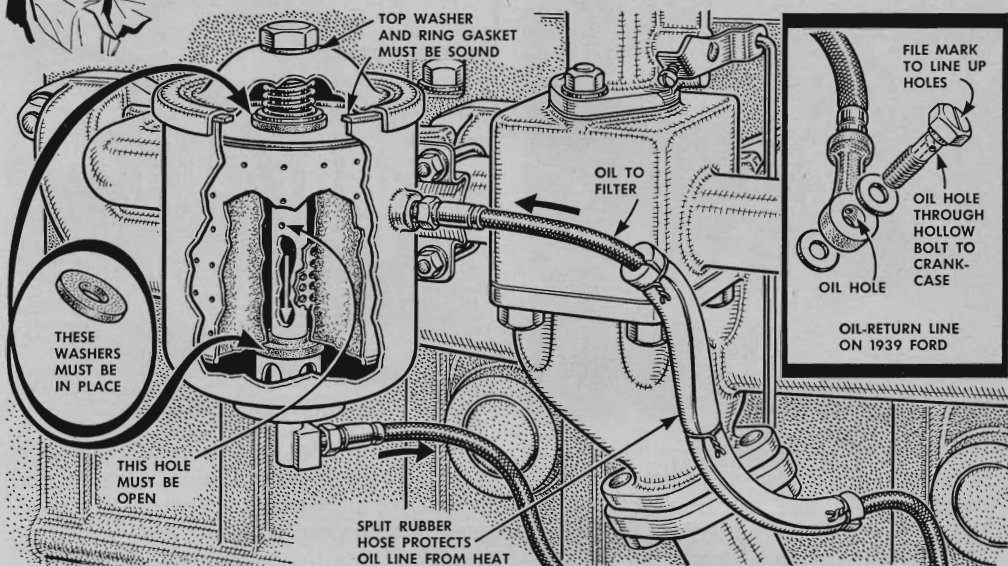
If the beading pulls away from the joint between body and fender, you can pull it back in place with a short piece of soft, noncorrosive light-gauge wire, perhaps Monel. Put a nail through the looped wire under the fender and turn to tighten.



A durable antifreeze tag for attaching to the radiator can be made by cutting the brand name from an empty can. Paper tags ordinarily used to show what's being used and warn against draining have a habit of falling to pieces if they become wet.



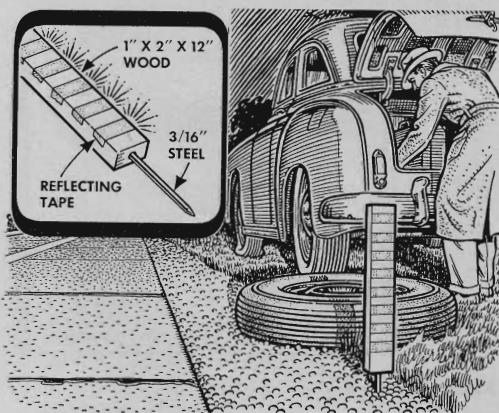
Hints FROM THE MODEL GARAGE



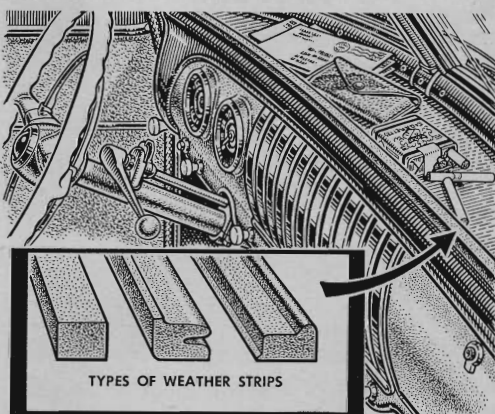
If an oil filter is not working properly you may find the reason or cure here. If the replaceable-cartridge type isn't cleaning the oil, remove the cartridge and make sure the sealing washers, top and bottom, haven't been omitted. Their job is to force oil through the element.

When an element is replaced, the small hole or holes in the hollow tube in the cen-

ter should be cleaned with a bent hairpin or wire. Clogged holes prevent filtering action. On cars where the oil line passes near the exhaust manifold, heat may weaken and break the line. Protect it with a piece of hose as shown. On some older Fords, oil returns from the filter through a hollow bolt. A mark filed in the bolt head will help line up the holes.



Reflecting tape attached to a piece of wood will give you an inexpensive warning signal for roadside breakdowns. A steel rod will support it.



Sponge-rubber weather strip cemented on the flat surface above an instrument panel provides a convenient storage place for maps, matches, cigarettes and other items.

Please turn the page for more auto hints.

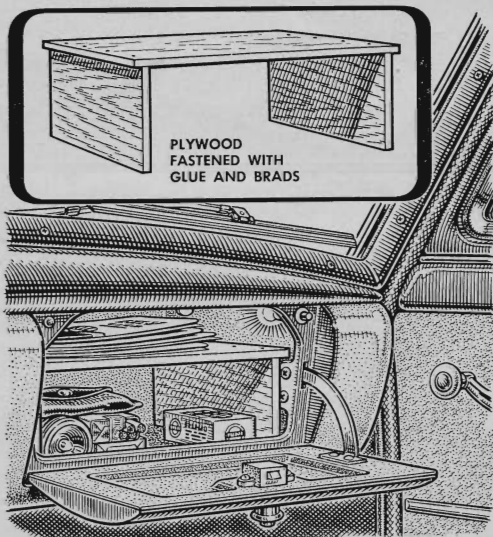
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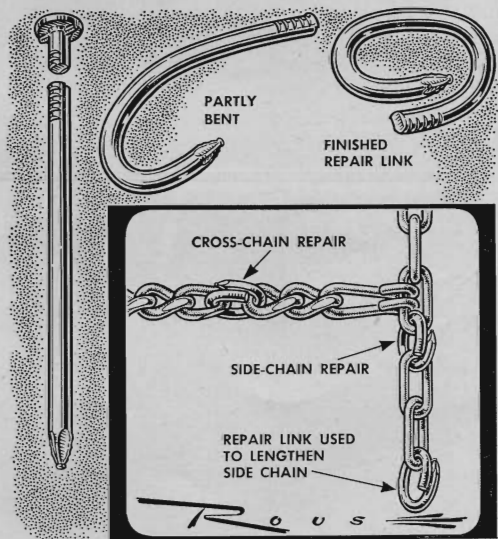
A pair of old tires can be put to use as driveway guides. Since a car can hit them without damage, they can be placed closer to the driveway than other types. Put stones in the buried section of each tire for stability.



To warn of flat tires, install an extra curb-warning whisker. Bend down the end to ride about halfway between the pavement and the rim of the wheel. Then, the noise as the wire scrapes the ground will let you know the tire has gotten soft.



A wood shelf or "bench" built to fit your glove compartment will help keep the contents in order. Leave more space at the bottom than at the top so that bulky objects will have enough room. Maps and other papers will go on the top shelf.



For emergency repair of tire chains, make links from 16-penny nails. Clip off the head and bend the nail as shown, using two pairs of pliers. Leave the opening wide enough so the link can be slipped in place and then bent closed.